

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-20 (Canceled).

Claim 21 (Currently Amended): A rotation member applied to and rotating in a housing, the rotation member comprising:

engaging portions respectively formed on longitudinal ends of the rotation member on a cylindrical side surface around a circumference of the rotation member, the engaging portions being held by the housing and rotating relative to the housing; and

a coating covering the engaging portions and including a mixture of one or more wear-resistant materials selected from the group consisting of Si, cubic BN, TiC, WC, SiC, Cr₃C₂, ZrO₂-Y and TiB, and one or more solid lubricants selected from the group consisting of hexagonal BN, Cr₂O₃, WS₂ and BaZrO₄, the coating being deposited from a tool electrode including the wear-resistant materials and the solid lubricant by processing the engaging portions as a workpiece with electric spark machining and including gradient alloy layers.

Claims 22 (Canceled).

Claim 23 (Previously Presented): The rotation member of claim 21, wherein the coating consists essentially of one or more wear-resistant materials selected from the group consisting of Si, cubic BN, TiC, WC, SiC, Cr₃C₂, ZrO₂-Y and TiB and one or more solid lubricants selected from the group consisting of hexagonal BN, Cr₂O₃, WS₂ and BaZrO₄.

Claim 24 (Previously Presented): The rotation member of claim 21, wherein the electric spark machining is carried out with rotating the rotation member.

Claim 25 (Previously Presented): The rotation member of claim 21, wherein grooves configured to pool a lubrication liquid are formed concentrically around the engaging portions.

Claim 26 (Currently Amended): A housing for rotatably supporting a rotation member, the housing comprising:

the rotation member;
a supporting portion configured to rotatably support each longitudinal end of the rotation member such that the rotation member rotates relative to the housing; and
a coating covering a bearing of the supporting portion into which the rotation member is inserted, the coating including a mixture of one or more wear-resistant materials selected from the group consisting of Si, cubic BN, TiC, WC, SiC, Cr₃C₂, ZrO₂-Y and TiB, and one or more solid lubricants selected from the group consisting of hexagonal BN, Cr₂O₃, WS₂ and BaZrO₄, the coating being deposited from a tool electrode including the wear-resistant materials and the solid lubricants by processing the bearing as a workpiece with electric spark machining and including gradient alloy layers.

Claims 27 (Canceled).

Claim 28 (Previously Presented): The housing of claim 26, wherein the coating consists essentially of one or more wear-resistant materials selected from the group consisting of Si, cubic BN, TiC, WC, SiC, Cr₃C₂, ZrO₂-Y and TiB and one or more solid lubricants selected from the group consisting of hexagonal BN, Cr₂O₃, WS₂ and BaZrO₄.

Claim 29 (Previously Presented): The housing of claim 26, wherein the bearing includes a groove configured to pool a lubrication liquid.

Claim 30 (Previously Presented): A gear box comprising of the rotation member of claim 21.

Claim 31 (Previously Presented): A gear box comprising the housing of claim 26.

Claim 32 (Previously Presented): A shaft structure of variable vanes for regulating a fluid, comprising the rotation member of claim 21.

Claim 33 (Previously Presented): A shaft structure of variable vanes for regulating a fluid, comprising the housing of claim 26.

Claims 34-44 (Canceled).

Claim 45 (Previously Presented): The housing of claim 26, further comprising a bush disposed in the supporting portion and surrounding each of the engaging portions, the bush being formed of a different material than a remainder of the housing.

Claims 46-47 (Canceled).

Claim 48 (Previously Presented): The rotation member of claim 21, wherein the coating covering the engaging portions includes a mixture of one or more wear-resistant materials selected from the group consisting of Si, cubic BN, TiC, SiC, Cr₃C₂, ZrO₂-Y and

TiB, and one or more solid lubricants selected from the group consisting of hexagonal BN, WS₂ and BaZrO₄.

Claim 49 (Previously Presented): The housing of claim 26, wherein the coating covering the bearing of the supporting portion includes a mixture of one or more wear-resistant materials selected from the group consisting of Si, cubic BN, TiC, SiC, Cr₃C₂, ZrO₂-Y and TiB, and one or more solid lubricants selected from the group consisting of hexagonal BN, WS₂ and BaZrO₄.